

IN THE CLAIMS

1. (Previously Presented) A method of forming multi-layers for manufacturing a thin film transistor (TFT) using multiple process chambers, comprising:
forming a first layer of silicon dioxide for the thin film transistor on a glass substrate using a first non-chemical physical vapor deposition in a first process chamber;
transferring the substrate including the first layer to a second process chamber without breaking vacuum;
sequentially forming a second layer of amorphous silicon for the thin film transistor in the second process chamber using a second non-chemical physical vapor deposition on the first layer without breaking vacuum for fabricating the thin film transistor; and
forming additional layers on top of the second layer for completing formation of the thin film transistor.

2. (Previously Presented) The method of claim 1, wherein the physical vapor deposition for forming the first layer and the second layer comprises pulsed-DC or RF sputtering.

3. (Previously Presented) The method of claim 1, wherein the first layer is formed using a gas mixture of Ar+O₂ using a SiO₂ target P-doped with a resistivity of 1-50 Ohms-centimeters.

4. (Previously Presented) The method of claim 3, wherein the first layer, the second layer and the additional layers form the thin film transistor into a liquid crystal diode (LCD).

5. (cancelled)

6. (cancelled)

7. (cancelled)

8. (cancelled)

9. (cancelled)

10. (cancelled)

11. (cancelled)

12. (cancelled)

13. (cancelled)

14. (Original) The method of claim 1, wherein said forming a first layer is performed by sputtering using a first target comprising silicon dioxide.

15. (Original) The method of claim 1, wherein said forming a second layer is performed by sputtering using a target formed of a material selected from the group consisting of single crystalline silicon and polycrystalline silicon.

16. (Original) The method of claim 1, wherein the physical vapor deposition for forming the second layer comprises regular-DC, pulsed DC or RF sputtering.

Claims 17 through 28 have been withdrawn.

29. (Previously Presented) The method of claim 1, wherein no annealing is performed between forming a first layer and forming a second layer.

30. (Previously Presented) The method of claim 1 including using a mixture of He/Ar gas to form the second layer while introducing a hydrogen flow.

31. (New) A method of forming multi-layers for manufacturing a thin film transistor (TFT) using multiple process chambers, comprising:

forming a first layer of silicon dioxide for the thin film transistor on a glass substrate using a first physical vapor deposition in a first process chamber;

transferring the substrate including the first layer to a second process chamber without breaking vacuum;

sequentially forming a second layer of amorphous silicon for the thin film transistor in the second process chamber using a second physical vapor deposition on the first layer without breaking vacuum for fabricating the thin film transistor; and

forming additional layers on top of the second layer for completing formation of the thin film transistor.

32. (new) The method of claim 31, wherein forming the first layer is performed by sputtering using a first target comprising a silicon material selected from the group consisting of polysilicon and single-crystal silicon.

33. (New) The method of claim 31, wherein the first layer is silicon dioxide and is sputter deposited from the first target with oxygen.

34. (New) The method of claim 31, wherein the first layer is silicon dioxide and is sputter deposited from the first target with a reactive gas mixture comprising oxygen and He.

36. (new) The method of claim 31, wherein the first layer is silicon dioxide and is sputter deposited from the first target with a reactive gas mixture comprising oxygen and H₂.

37. (new) The method of claim 31, wherein the first layer is silicon dioxide and is sputter deposited from the first target with a reactive gas mixture comprising oxygen, He, and H₂.

38. (new) The method of claim 31, wherein the first layer is silicon dioxide and is sputter deposited from the first target with a reactive gas mixture comprising oxygen and any one of Ar, Ne, or Kr.

39. (new) The method of claim 31, wherein the first layer is silicon dioxide and is sputter deposited from the first target with a reactive gas mixture comprising oxygen, He, and any one of Ar, Ne, or Kr.

40. (new) The method of claim 39, wherein the reactive gas mixture comprises oxygen, He and Ar, and wherein a ratio of Ar in He is between approximately 3-20% Ar in Helium.

41. (new) The method of claim 31, wherein the predetermined resistivity R1 is in a range of approximately 1-50 Ohm-cm.